

# Questacon at HOME

## Year 5 Activity Sheet

### Light

What is colour? How do we see it? Why do some materials, like crazy mirrors, change how we see things? Light is all around us, it is not only the reason we can see but also how we experience vivid colour. In this section we are going to explore your knowledge on light!

#### Q1. Which of these is not a source of light?

- The Sun
- A Torch
- The Moon
- A Candle

#### Q2. Why are granny smith apples green?

- It reflects all colours but absorbs green light
- It reflects green light and absorbs all other colours
- It transmits green light
- It transmits all colours but absorbs green light

#### Q3. Visible light contains many colours, which is not one of those colours?

- Yellow
- Green
- Black
- Red

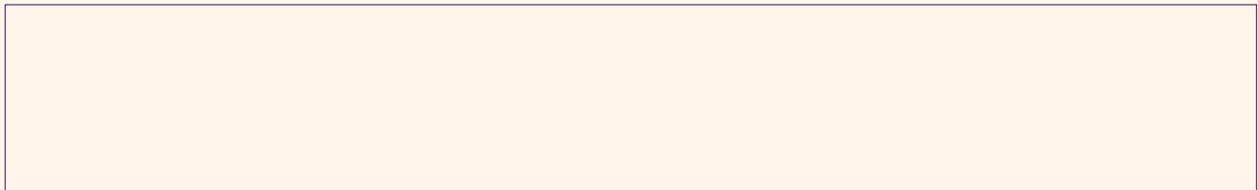


## Year 5 Activity Sheet

### ACTIVITY TIME — Draw (materials: a blank piece of paper)

Draw a picture (we recommend an arrow pointing left) and place it behind a glass full of water.

What happens to the picture?



### ACTIVITY TIME – Shine

Grab a torch and test how light shines through the following materials:

1. Paper is
  - Transparent
  - Translucent
  - Opaque
2. Aluminium foil is
  - Transparent
  - Translucent
  - Opaque
3. Glass
  - Transparent
  - Translucent
  - Opaque
4. Wood is
  - Transparent
  - Translucent
  - Opaque
5. Your clothes are
  - Transparent
  - Translucent
  - Opaque



## Year 5 Activity Sheet

Using your torch, now grab something tall like a water bottle and move the torch around the bottle. What happens to the shadows?

### ACTIVITY TIME — reflection

Grab a metal spoon and look at yourself in it. Do you look funny? What do you notice?

Now flip the spoon over and look at yourself again. Do you look different to how you did on the other side of the spoon?



## Light – Answers

### Q1. Which of these is not a source of light?

**The moon!** It shines because it reflects the sun's light.

### Q2. Why are granny smith apples green?

**It reflects green light!** The colour we see on objects is caused by the light they reflect.

### Q3. Visible light contains many colours, which is not one of those colours?

**Black!** Objects appear to be black when they absorb all visible light.

### ACTIVITY TIME — Draw

The picture should reverse, so if you drew an arrow pointing left it should now point right. This is because when light travels through water it slows down causing it to bend. This is called refraction and this effect is what causes your drawing to flip!

### ACTIVITY TIME — Shine

- 1 Translucent
- 2 Opaque
- 3 Transparent
- 4 Opaque
- 5 Translucent

A transparent material lets all light through. A translucent material lets some light through. An opaque material lets no light through. You could test this for yourself at Questacon in Gallery 7! We have different materials which you can hide behind to see if an infrared camera (picks up light wavelengths that correspond to heat) can see your body!

### Using your torch, now grab something tall like a water bottle and move the torch around the bottle. What happens to the shadows?

The shadows should get **longer** when you move the torch **lower** and **shorter** when you move the torch **higher**. You can experiment with your own shadow in the Frozen Shadows exhibit at Questacon.

### ACTIVITY TIME – Reflection

The spoon is a mini curved mirror. One side is convex and the other side is concave. The curves refract the light so that the image reflected is wonky. You can further test light refraction using the warped mirrors exhibit in Q Lab at Questacon.

